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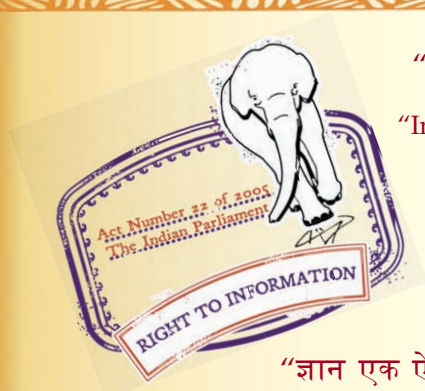
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IS 4888-4 (1982): Cones for Yarn Winding, Part IV: Half Angle of the Cone 915' [TXD 14: Machinery for Fabric Manufacture]



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IS : 4888 (Part IV) - 1982

(Reaffirmed 1994)

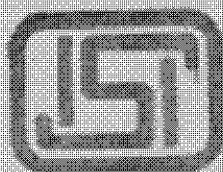
Indian Standard

SPECIFICATION FOR
CONES FOR YARN WINDING

PART IV HALF ANGLE OF THE CONE $9^{\circ}15'$

(Second Revision)

UDC 677.053.296.2



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INDIAN STANDARDS INSTITUTION
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NEW DELHI 110002

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May 1982

IS : 4888 (Part IV) - 1982

Indian Standard
SPECIFICATION FOR
CONES FOR YARN WINDING

PART IV HALF ANGLE OF THE CONE 9°15'

(*Second Revision*)

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IS : 4888 (Part IV) - 1982

(Continued from page 1)

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Indian Standard
SPECIFICATION FOR
CONES FOR YARN WINDING

PART IV HALF ANGLE OF THE CONE 9°15'

(*Second Revision*)

0. FOREWORD

0.1 This Indian Standard (Part IV) (Second Revision) was adopted by the Indian Standards Institution on 31 March 1982, after the draft finalized by the Textile Mill Accessories (Other Than Jute) Sectional Committee had been approved by the Textile Division Council.

0.2 This standard has been revised to include the dimensions of gauges used for checking the inner dimensions of the cones and the requirement of runout has been related to the length of the cone. The standard has also been split into four parts, each covering a particular angle of the cone.

0.3 In the preparation of this standard (Part IV) assistance has been derived from ISO 110-1978 'Cones for yarn winding (cross wound) — Half angle of the cone 9 degrees 15' issued by the International Organization for Standardization (ISO). This standard corresponds substantially to the international standard and compatible additions have been made in the Indian Standard.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard (Part IV) prescribes the requirements for cones for yarn winding (cross wound) having half angle of the cone of 9°15'.

*Rules for rounding off numerical values (revised).

IS : 4888 (Part IV) - 1982

2. TERMINOLOGY

2.1 For the purpose of this standard, the angle of cone shall mean the angle contained between the side and the axis, that is, half the total angle.

3. MANUFACTURE

3.1 Material — Cones may be manufactured from untreated, impregnated or lacquered paper or suitable plastic as agreed to between the buyer and the seller. In addition, the following details should be specified by the buyer:

- a) Nature of yarn to be wound;
- b) Treatment of surface;
- c) Wall thickness (corresponding to the nature of the yarn); and
- d) Details of tailing groove and notch for tail (if required).

3.2 Type — The cones shall be of rolled-in-top type.

3.3 Finish — The cone shall have plain, grooved, embossed, velvetted or flock finish. The top edge of rolled-in-top cones shall be rounded and polished for a minimum length of 10 mm from nose. The usable length of cone shall be 25 mm less than overall length. The paint or enamel used for colour tipping of cone-top shall be of fast colour so that it does not stain the yarn during usage.

4. REQUIREMENTS

4.1 Dimensions — The dimensions of cones shall conform to the requirements of Fig. 1. However, if an agreement between the buyer and the seller provides for dimensions other than those specified, the declared dimensions shall be subject to the tolerances specified in Fig. 1.

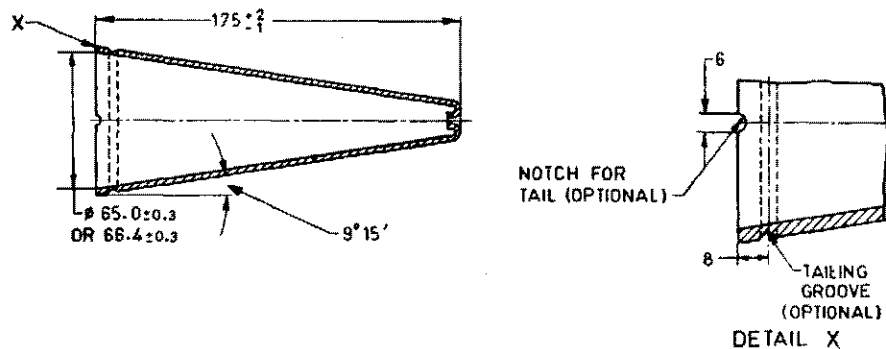
4.1.1 The inner dimensions of the cones shall be checked with the help of gauge of dimensions given in Fig. 2. The edge of the larger end of the cone after it has been placed loosely on the gauge and then pressed home with hand shall be between the tolerance marks.

4.1.2 To check the length of the cone, suitable slide gauge shall be used. The conical gauge shown in Fig. 2 cannot be used for this purpose.

4.1.3 The deviations from the nominal value $9^{\circ}15'$ of half angle of cone are limited by the tolerances for internal diameter at base and overall height as indicated in Fig. 1. They do not influence the practical use of the cones during the winding and further processes.

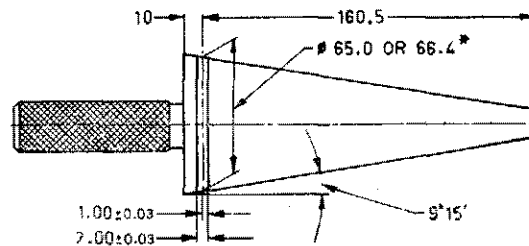
IS : 4888 (Part IV) - 1982

4.1.4 The dimensions not specified in Fig. 1 are left to the discretion of the manufacturer.



All dimensions in millimetres.

FIG. 1 CONE



*The tolerances on the cone diameters of the gauge, measured at any distance from the ends shall be js 6 [see IS : 919-1963 'Recommendations for limits and fits for engineering (revised)'].

All dimensions in millimetres.

FIG. 2 GAUGE

4.2 Runout — When the inner cone is seated on a locating device, the deviations of the observations taken from a gauge placed at any point of the outer diameter of the cone during one complete revolution shall not exceed 0.5 mm.

4.3 Mass — The average mass of a cone in a lot shall be as agreed to between the buyer and the seller. A tolerance of ± 8 percent on the agreed mass shall, however, be permissible for paper cones and ± 3 percent for plastic cones.

IS : 4888 (Part IV) - 1982

4.3.1 In case of paper cones, the agreed mass shall be equal to the average oven dry mass (at $103 \pm 2^{\circ}\text{C}$) of the cones plus 10 percent for moisture regain.

5. DESIGNATION

5.1 The cones shall be designated by their overall length \times internal base diameter, finish and angle of cone:

Example:

A $9^{\circ}15'$ plain finished cone having overall length of 175 mm and internal base diameter of 65 mm shall be designated as under:

175 \times 65, plain, $9^{\circ}15'$

6. PACKING

6.1 The cones for internal market shall be packed as agreed to between the buyer and the seller. However, for export, the cones shall be packed in either wooden boxes or suitable containers strong enough to withstand normal hazards of storage and transport.

6.2 Each case of cones shall bear the following information:

- a) Manufacturer's name, initials or trade-mark, if any;
- b) Number of cones packed in a case;
- c) Gross and net mass; and
- d) Designation of cones (*see 5.1*)

6.2.1 The cones may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7. SAMPLING

7.1 All the cones of the same base diameter and length delivered to a buyer against a despatch note, shall constitute a lot.

IS : 4888 (Part IV) - 1982

7.2 The conformity of the lot to the requirements of this standard shall be determined on the basis of the tests carried out on the samples selected from it.

7.3 Unless otherwise agreed to between the buyer and the seller, the samples shall be selected as prescribed in 7.4 and 7.5.

7.4 The number of cases to be selected from a lot shall depend on the size of the lot and shall be in accordance with col 1 and 2 of Table 1. The cases so selected shall constitute the gross sample.

TABLE 1 SAMPLE SIZE AND PERMISSIBLE NUMBER OF NON-CONFORMING CONES

| NUMBER OF CASES IN THE LOT | NUMBER OF CASES TO BE SELECTED | NUMBER OF CONES TO BE SELECTED | PERMISSIBLE NUMBER OF NON- CONFORMING CONES |
|-------------------------------|-----------------------------------|-----------------------------------|--|
| (1) | (2) | (3) | (4) |
| Up to 3 | All | 150 | 4 |
| 4 „ 6 | 4 | 250 | 5 |
| 7 „ 14 | 5 | 300 | 7 |
| 15 and above | 10 | 450 | 9 |

7.5 The number of cones to be tested and the criteria for conformity for each of the characteristics shall be as follows:

| <i>Characteristic</i> | <i>Number of Cones to be Tested</i> | <i>Criteria for Conformity</i> |
|--------------------------|---|--|
| Dimensions and runout | See col 3 of Table 1 | Non-conforming cones not to exceed the correspond- ing number given in col 4 of Table 1 |
| Mass | Two sets of agreed number of cones from each case if the gross sample consists of 5 or less cases; and one set of agreed number of cones from each case in the gross sample if it consists of more than 5 cases | Each observed value satisfies the requirement (see 4.3) |

INDIAN STANDARDS
ON
TEXTILE MILL ACCESSORIES (OTHER THAN JUTE)

IS :

- 1724-1971 Wooden warp bobbins for rabbeth spindles (*second revision*)
- 1794-1971 Shuttles for plain calico looms (*first revision*)
- 1896-1970 Picking sticks for overpick cotton looms (*first revision*)
- 2058-1973 Shuttles for pirn-changing automatic cotton looms (*first revision*)
- 3265-1971 Weft pirns (taper fit) for use in shuttles for plain calico looms (*first revision*)
- 3496-1966 Dobby lags and pegs
- 3625-1971 Warp tubes for use on aluminium plug type spindles (*first revision*)
- 3834-1966 Lease rods for cotton looms
- 4187-1966 Skewers for use on cotton speed frames
- 4416-1967 Dobby barrels
- 4417-1971 Weft pirns for shuttles for pirn-changing automatic cotton, woollen and worsted looms (*first revision*)
- 4775-1976 Picking sticks for automatic and underpick looms (*first revision*)
- 4888 (Part I)-1982 Cones for yarn winding : Part I Half angle of the cone 3°30' (*second revision*)
- 4888 (Part II)-1982 Cones for yarn winding : Part II Half angle of the cone 4°20' (*second revision*)
- 4888 (Part III)-1982 Cones for yarn winding : Part III Half angle of the cone 5°57' (*second revision*)
- 5141-1969 Wooden cones for winding yarn
- 5473-1969 Double flanged bobbins used in woollen and worsted mills
- 5492-1969 Pirns for woollen and worsted plain looms
- 6268-1971 Accessories for use in shuttles for plain calico looms
- 7614-1975 Wooden bobbins for ring doubling and twisting frames
- 8684-1978 Classification of terms for shuttles
- 9280-1979 Wooden shuttle blocks for non-automatic looms
- 9287-1979 Wooden shuttle blocks for pirn-changing automatic looms
- 9337 (Part I)-1979 Bobbins and pirns used in textile mills : Part I Wooden flyer bobbins

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

| QUANTITY | UNIT | SYMBOL |
|---------------------------|----------|--------|
| Length | metre | m |
| Mass | kilogram | kg |
| Time | second | s |
| Electric current | ampere | A |
| Thermodynamic temperature | kelvin | K |
| Luminous intensity | candela | cd |
| Amount of substance | mole | mol |

Supplementary Units

| QUANTITY | UNIT | SYMBOL |
|-------------|-----------|--------|
| Plane angle | radian | rad |
| Solid angle | steradian | sr |

Derived Units

| QUANTITY | UNIT | SYMBOL | DEFINITION |
|----------------------|---------|--------|--|
| Force | newton | N | $1 \text{ N} = 1 \text{ kg.m/s}^2$ |
| Energy | joule | J | $1 \text{ J} = 1 \text{ N.m}$ |
| Power | watt | W | $1 \text{ W} = 1 \text{ J/s}$ |
| Flux | weber | Wb | $1 \text{ Wb} = 1 \text{ V.s}$ |
| Flux density | tesla | T | $1 \text{ T} = 1 \text{ Wb/m}^2$ |
| Frequency | hertz | Hz | $1 \text{ Hz} = 1 \text{ c/s (s}^{-1}\text{)}$ |
| Electric conductance | siemens | S | $1 \text{ S} = 1 \text{ A/V}$ |
| Electromotive force | volt | V | $1 \text{ V} = 1 \text{ W/A}$ |
| Pressure, stress | pascal | Pa | $1 \text{ Pa} = 1 \text{ N/m}^2$ |

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